IN THE UNITED STATES PATENT OFFICE

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Art unit: 3749
First named inventor: Kan Kristenson
Title: Air supply device.
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Examiner Name: Samantha A. Miller
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Request for continued examination (RCE) pursuant to 37 CFR 1.114.

In response to the final office action mailed in this matter December 31, 2007, applicants respectfully request that the amendments to the claims be entered as here presented.

The amendments introduce no new matter.

Amendments to the claims:

This listing of claims supercedes all prior versions.

1. (Currently amended) Air supply device for obtaining zones of clean air in premises, said air supply device (1) comprising at least one air permeable body (11) including at least one inner and at least one outer part (12, 13) of which the inner part (12) consists of or includes porous material, wherein: at least one fan device (22) is provided to bring air (A), which is to be supplied to the premises (2), to flow through the air permeable body (11) at low air velocity, at least one device (23) is provided to see to that the air (A) supplied to the premises (2) has a lower temperature than the air in said premises (2), the air permeable body (11), in cross section, has the shape of parts of a circle or substantially a circle or primarily parts of a circle or substantially a circle, and the combination that the inner part (12) consists of or includes porous material and the outer part (13) has passages (16) which are substantially rectilinear, substantially uniform in thickness and located close to each other, said passages (16) further having a length (L) which is at least four times greater than their width (B) in order to generate rectilinear and uniformly distributed partial air streams (6a) for making a turbulent zone (7a) around the clean-air zone (7) more narrow so that the turbulence around the clean-air zone (7) hereby becomes less and wherein the air flow generated through said air permeable body is substantially laminar.

2. (Previously presented) Air supply device according to claim 1, wherein the length (L) of each passage (16) is 4-10 times greater than their width (B).

3. (Previously presented) Air supply device according to claim 2, wherein the length (L) of each passage (16) is 4-6 times greater than their width (B).

4. (Previously presented) Air supply device according to claim 1, wherein: the passages (16)

have a circular or substantially circular cross section, and they have the same or substantially the same diameter along their entire length (L).

5. (Previously presented) Air supply device according to claim 1, wherein all or almost all passages (16) are of equal length.

6. (Previously presented) Air supply device according to claim 1, wherein the passages (16) are defined by tubes (17) which are located close to each other and connected to each other.

7. (Previously presented) Air supply device according to claim 6, wherein the tubes (17) are made of a plastic material.

8. (Previously presented) Air supply device according to claim 6, wherein the tubes (17) are made of a metallic material.

9. (Previously presented) Air supply device according to claim 6, wherein the tubes (17) are made of a ceramic material.

10. (Previously presented) Air supply device according to claim 6, wherein the tubes (17) are interconnected by fusing.

11. (Previously presented) Air supply device according to claim 1, wherein the porous material (14) of the inner part (12) is designed to permit filtration of air flowing through said porous material in order to obtain a low content of particles in the premises (2).

12. (Previously presented) Air supply device according to claim 1, wherein the porous material (14) of the inner part (12) consists of foamed plastic with open cells.

13. (Previously presented) Air supply device according to claim 1, wherein the outer part (13) is thicker than the inner part (12).

14. (Previously presented) Air supply device according to claim 1, wherein the outer part (13) consists of a heat resistant material.

15. (Previously presented) Air supply device according to claim 1, wherein the inner and outer parts (12, 13) are connected to each other.

16. (Previously presented) Air supply device according to claim 1, wherein the body (11) is in cross section shaped as a semicircle or substantially as a semicircle.

17. (Previously presented) Air supply device according to claim 1, wherein the air permeable body (11) is in cross section shaped as a quarter of a circle or substantially as a quarter of a circle.

18. (Previously presented) Air supply device according to claim 1, wherein the air permeable body (11) is shaped as a spherical segment or as a substantially spherical segment.

19. (Previously presented) Air supply device according to claim 1, wherein the device (23) which is provided to see to that the air (A) supplied to the premises (2) has a lower temperature than the air in said premises (2), is provided to supply air at such temperature that said air descends to a low level in the premises (2).

20. (Previously presented) Air supply device according to claim 1, wherein: impure air is gathered in an upper zone (18) closest to the ceiling (9) of the premises (2), at least one air outlet (19) for impure air is provided at the ceiling (9) of the premises (2), and the air permeable body (11) is located beneath the upper zone (18) such that substantially no impure air is coejected out of the upper zone (18) by the air streams (6) discharged by the air permeable body (11).

21. (Previously presented) Air supply device according to claim 1, wherein the air permeable

body (11) is located above a door (20) to the premises (2) and it is elongated and extends along at least a part of the width of the door (20).

22. (Previously presented) Air supply device according to claim 1, wherein the device (23) which is provided to see to that the air (A) supplied to the premises (2) has a lower temperature than the air in said premises (2), is a device for taking in cool air and/or includes a cooling device or is a cooling device for cooling air.

23. (Previously presented) Air supply device according to claim 1, wherein said porous material retards air flow such that air flow is distributed over an entire inner surface of said inner part (12) and a semi-laminar flow is generated at an inner surface of said outer part (13).

24. cancelled.

Remarks.

(1). Support in the specification.

Support in the specification for amendments may be found at p. 3, l 10-22.

(2). Rejection of claim 1 as obvious under 35 USC 103.

The examiner rejects all claims as obvious over Kristenson, US 5,167,577, in light of DE 2608792 A.

The applicants respectfully submit that the examiner misunderstands DE 2608792, which has, until now, been available only as a machine translation into english. In the supplemental information disclosure statement submitted herewith, applicants present a formal, authorized translation of DE 2608792, to assist the examiner in evaluation of pending claims.

(a). DE 26087902 does *not* suggest rectilinear air passages.

Whatever may *appear* to have been disclosed in the artists' rendition of Figure 1, the specification of DE 2608792 states very clearly that the air passages of its "honeycombed injector bushing" are *expanding jets*, with an *extension angle* of less than 15 degrees. (See translation of DE 2608792, p. 3, paragraph 1).

The invention of DE 26087902 provides reduced exhaust velocity simply because the aperture of the interior side of the *expanding jets* is smaller than the aperture at the outlet side of the *expanding jets*. These *expanding jets* provide air flow that is NOT laminar but *conical* propagation. This is clearly stated in the specification. (See translation of DE 2608792, p. 3, paragraph 1): "By means of ... the numerous expanding jets, below an angle of 15°, a basically induction-free and conical expansion of the supply air and a reduction of the exhaust velocity according to the relationship $v2 = V1 * r1^2 / r2^2$ is achieved."

This principle of air flow dynamics, well known in the art, is explained in the reference "The mechanics of nonviscous fluids," Chapter 13 from General Physics, editors M. Sternheim and J. Kane, submitted herewith in the supplmental information disclosure statement. See Sternheim and Kane, p. 287, equation 13.12.

(b). DE 26087902 does *not* teach or suggest air passages having a length at least 4 times greater than their width.

DE 26087902 is not concerned with *laminar* flow, much less with *rectilinear* air passages. It provides no teaching or suggestion that the air passages should have a length at least 4 times greater than their width.

The applicants respectfully submit that, in the case of the *expanding jets* taught by DE 26087902, the claim language "length at least 4 times greater than their width" could, in any case, only be interpreted in terms of width of the interior aperture. Whatever may *appear* to have been disclosed in the artists' rendition of Figure 1, the specification teaches only an *extension angle* of less than 15 degrees and is silent with respect of the relative relationships between length and width of the interior aperture.

(c). DE 26087902 does *not* suggest laminar flows as a means to avoid co-ejection of impure air with air ejected by the air supply device.

Preferred embodiments of the present invention provide a zone of very pure air within a premises that otherwise contains impure air, i.e., to provide a breathing zone for patients requiring very pure air. See specification, l 1-4.

In contrast, DE 26087902 provides means for ventilating a clean-room work area. The invention described by DE 26087902 does not seek to provide one small zone of very pure air, but rather provides a clean air sweeper that *pushes* floating particles in an *entire clean-room work area* to an exhaust air outlet. A particular concern addressed by DE 26087902 is

floating particles arising from *disturbance sources* in a clean-room work area, such as lamps. DE 26087902 particularly seeks to "eliminate the incalculable influence of disturbance sources," and to reduce energy expenditures required for providing a clean air sweep of "big flow cross-sections." DE 26087902 provides a solution to the problem of disturbance sources in that it conducts clean air "radially against the disturbance sources." The manner of clean air conduction is a *conical expansion of the air supply*, which is reasonable and appropriate for the clean air sweeper use envisioned by DE 26087902. (See translation of DE 2608792, p. 2, paragraph 2-5 and p.3, paragraph 1).

The applicants respectfully submit that nothing in the specification of DE 26087902, and its description of a clean air sweeper that provides *conical expansion of the air supply,* can be construed as suggesting laminar flows as a means to avoid co-ejection of impure air into a clean air zone.

Accordingly, the applicants respectfully submit that the examiner's conclusions regarding DE 26087902 are erroneous.

(d). The applicants have amended the pending claims to incorporate a limitation wherein the device provides a substantially *laminar* pure air flow.

In the interests of clarity, the applicants have included a limitation to claim 1 wherein the air flow generated through said air permeable body is substantially laminar.

Accordingly, applicants respectfully request that the obviousness rejection be withdrawn.

(3). Rejection of additional pending claims as obvious under 35 USC 103.

The applicants respectfully submit that, where claim 1 is allowable, the examiner's comments regarding dependent claims are not relevant.

(4). Conclusion

The applicants respectfully submit that the prior art reference DE 26087902 does not teach or suggest rectilinear air passages, or air passages having a length at least 4 times greater than their width. DE 26087902 does not suggest laminar flows as a means to avoid co-ejection of impure air with air ejected by the air supply device. Accordingly, independent claim 1 cannot be obvious in light of DE 26087902.

The applicants respectfully submit that all claims are in condition for allowance and respectfully request prompt allowance.

Respectfully for the applicants,

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